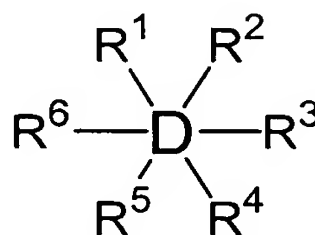


Listing of Claims:

Claims 1-64 (Canceled)

65. (Previously Presented) A method of obtaining a polymer comprising:
- subjecting a higher diamondoid derivative to polymerization conditions thereby forming a polymerization reaction product containing a higher diamondoid containing polymer; and
 - isolating the polymer from the polymerization reaction product.
66. (Previously Presented) A method of obtaining a polymer comprising:
- subjecting a higher diamondoid derivative containing one or two polymerizable moieties to polymerization conditions thereby forming a polymerization reaction product containing a higher diamondoid containing polymer; and
 - isolating the polymer from the polymerization reaction product.
67. (Previously Presented) A method of obtaining a polymer comprising:
- subjecting a higher diamondoid derivative to polymerization conditions thereby forming a polymerization reaction product containing a higher diamondoid containing polymer; the higher diamondoid derivative having the formula:

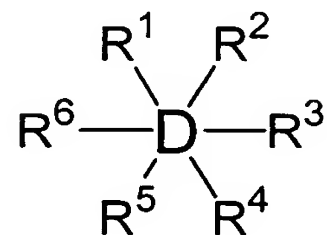


wherein

D is a higher diamondoid nucleus, and

R^1 , R^2 , R^3 , R^4 , R^5 and R^6 are independently selected from the group consisting of hydrogen and a polymerizable moiety; provided at least one of the R's is a polymerizable moiety; and

- b. isolating the polymer from the polymerization reaction product.
68. (Previously Presented) A method of obtaining a polymer comprising:
- a. subjecting a higher diamondoid derivative to polymerization conditions thereby forming a polymerization reaction product containing a higher diamondoid containing polymer; the higher diamondoid derivative containing one or two polymerizable moieties wherein the polymerizable moieties are selected from alkenyl, alkynyl, OH, C₂H₃O, SH, NH₂, CO₂H, C₆H₅, C₆H₄NH₂, C₆H₄CO₂H or C₆H₄OH; and
- b. isolating the polymer from the polymerization reaction product.
69. (Previously Presented) A method of obtaining a polymer comprising:
- a. subjecting a higher diamondoid derivative to polymerization conditions thereby forming a polymerization reaction product containing a higher diamondoid containing polymer; the higher diamondoid derivative having the formula:

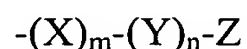


wherein

D is a higher diamondoid nucleus, and

R¹, R², R³, R⁴, R⁵ and R⁶ are independently selected from the group consisting of hydrogen and a polymerizable moiety; provided at least one of the R's is a polymerizable moiety;

wherein the polymerizable moiety has the structure:



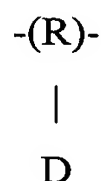
wherein

X is O, NR⁷, OC(O), NR⁸C(O), C(O)O or C(O)NR⁹, wherein R⁷, R⁸ and R⁹ are independently hydrogen or alkyl; and

b. isolating the polymer from the polymerization reaction product.

70. (Original) A higher diamondoid polymer comprising, as a recurring unit, a higher diamondoid derivative having a derivatizing moiety attached to a higher diamondoid, said derivatizing moiety covalently bonding the higher diamondoid into the polymer.

71. (Original) The higher diamondoid polymer of Claim 70 comprising *n* recurring units having the formula:

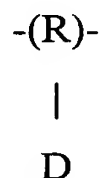


wherein

R is the derivatizing group;

D is the higher diamondoid and *n* is an integer larger than 1.

72. (Previously Presented) The higher diamondoid polymer of Claim 70 comprising *n* recurring units having the formula:



and *m* recurring units having the formula:



wherein

R is the derivatizing group;

D is the higher diamondoid;

CP is a nondiamondoid copolymer unit, and n and m are each integers greater than 1 with the ratio of n to m having a value of from about 0.001 to about 1000.

73. (Original) The higher diamondoid polymer of Claim 70 comprising n recurring units having the formula:

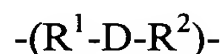


wherein

D is the higher diamondoid;

R is the derivatizing group and n is an integer greater than 1.

74. (Original) The higher diamondoid polymer of Claim 70 comprising n recurring units having the formula:



wherein

D is a higher diamondoid and R^1 and R^2 are two derivatizing groups.

75. (Previously Presented) The higher diamondoid polymer of Claim 70 comprising n recurring units having the formula:



and m recurring units having the formula:



wherein

D is the higher diamondoid;

R is the derivatizing group;

CP is a nondiamondoid copolymer unit, and n and m are each integers greater than 1 with the ratio of n to m having value of from about 0.001 to about 1000.

76. (Original) The higher diamondoid polymer of Claim 70 comprising n recurring units having the formula:



and m recurring units having the formula:

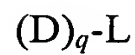


wherein

R^1 and R^2 are derivatizing groups.

77. (Original) The higher diamondoid polymer of Claim 70 additionally comprising a preformed backbone to which the higher diamondoid derivatives are covalently bonded.
78. (Original) A polymer having at least two higher diamondoid components covalently bonded to each other.
79. (Original) The polymer of Claim 78 wherein said at least two higher diamondoid components are covalently bonded to each other through a linker.
80. (Original) The polymer of Claim 78 wherein said polymer is a homopolymer.
81. (Original) The polymer of Claim 78 wherein said polymer is a co-polymer.

82. (Original) A polymer of Claim 78 represented by formula



wherein

each D is independently a higher diamondoid group;

L is a linker; and

q is an integer from 2 to 100.

83. (Previously Presented) A polymer of Claim 78 represented by formula



wherein

each D is independently a higher diamondoid group; and

s is an integer from 2 to 1,000.

84. (Original) A polymer of Claim 78 represented by formula



wherein

each D is independently a higher diamondoid group;

each L is independently a linker; and

r is an integer from 1 to 1,000,000.

85. (Original) The polymer of Claim 84 wherein r is selected from 1 to 1000.